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PATENT
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Remarks

Claims 1-20 were pending in this application, of which Claims 7 and 18 have been canceled without prejudice or disclaimer of the subject matter therein. By this amendment, It is respectfully submitted that the pending claims define allowable subject matter.

Claims 1-20 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Wright et al(USP 5,685,308) in view of Wright et al. (USP 5,549,111). Applicant respectfully traverses this rejection for reasons set forth hereafter.

Regarding claim 1, it is respectfully submitted that even if combined, the '308 and '111 patents would not render obvious the claimed method for acquiring ultrasound data. Claim 1 requires decimating the first data stream by passing at least two consecutive data samples and by removing at least two other consecutive data samples therefrom to form a first decimated data stream. Neither the '111 patent, nor the '308 patent, teach or suggest the claimed decimation operation. The '111 and '308 patents both describe substantially similar receive beamformer processors. The '308 patent illustrates a digital multichannel receive processor in Figure 3, while the '111 patent illustrates the identical digital multichannel receive processor in Figure 11. The '308 patent describes the receive processor of Figure 3 at column 13, line 55 et seq., while the '111 patent describes the same receive processor of Figure 11 at column 39, line 21 et seq.

The beamformer processors of the '308 and '111 patents both include a first decimator R-150 and a second decimator R-162. However, neither the '111 patent, nor '308 patent, teach or suggest that the decimator's R-150 and R-162 should perform decimation by passing at least two consecutive data samples and by removing at least two other consecutive data samples therefrom to form the decimated data stream. Hence, even if combined, the '308 and '111 patents do not render obvious the method of claim 1.

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Claim 6 recites an ultrasound system that includes, among other things, a decimator for passing consecutive data samples from at least one of first and second data streams and for removing consecutive data samples from at least one of the first and second data streams. The decimator removes a different number of consecutive data samples based on a pass band. The system also includes a multiplexer for combining the first and second data samples such that the data samples passed by the first data stream are intermixed with the data samples passed by the second data stream.

The '111 and '308 patents do not teacher suggest any such decimator or multiplexer structures. The '111 and '308 patents describe the first and second decimators R-150 and R-162 to be programmable with a variety of programmable decimation factors and associated programmable filter coefficients. However, the '111 and '308 patents do not provide any examples of the decimation factors and filter coefficients needed to achieve the claimed decimation operation, namely removal of consecutive data samples. Nor do the '111 and '308 patents provide the ability to modify the decimation factors and filter coefficients based on a pass band. Also, the outputs of the decimators are passed to a summer R-126, not to a multiplexer. The outputs of the beamformer processors R-120 in the '111 and '308 patents are summed not intermixed. Nowhere do either of the '111 and '308 patents teach or suggest to utilize a multiplexer to combine the first and second data streams such that the data samples passed in the first data stream are intermixed with the data samples passed in the second data stream. Hence, even if combined, the '308 and '111 patents do not render obvious the method of claim 6.

Claim 12 recites a demodulator for demodulating data streams that includes, among other things, a multiplexer that interleaves the data stream with a time dependent signal and a filter that filters the data stream, where the filter comprises coefficients having two consecutive data samples representative of the desired impulse response interleaved with two consecutive data samples that are zeros. As explained above, the '111 and '308 patents do not teacher suggest coefficients of the demodulators R-150 and R-162 that render obvious the claimed demodulation

operation. Hence, even if combined, the '308 and '111 patents do not render obvious the method of claim 12.

Claim 17 recites a method for acquiring ultrasound data that includes, among other things, decimated first and second filter to data streams to form first and second decimated data streams and multiplexing the first and second decimated data streams. As explained above, the 111 and 308 patents do not teacher suggest multiplexing data streams, but instead simply sum data streams from different beamforming processors. Hence, even if combined, the '308 and '111 patents do not render obvious the method of claim 17.

In view of the foregoing amendments and remarks, all the claims now active in this application are believed to be in condition for allowance. Reconsideration and favorable action is respectfully solicited.

Respectfully Submitted,

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